DROPLETS FROM THE PLANKTON NET

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DROPLETS FROM THE PLANKTON NET[1)]

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XV. Record of a Caudate Form of *Pegea confoederata* from the Japanese Waters, with Some Notes on its Luminescence.

(Figs. 16, 17)

The senior author had a chance to observe and collect luminous animals caught in the flying-fish nets on a fishing boat in the waters off Suéyosi-Mura of Hatizyô-zima in a night of the spring fishing season, namely on April 25, 1953. Mingled with many luminous animals, *Pyrosoma*, mysids, *Euprymna*, *Beroë*, *Cestus* and siphonophores etc., a considerable number of aggregated forms of two species of salpa were discovered; they were identified by the junior author as *Thetys vagina* (TILESIUS) and *Pegea confoederata bicaudata* (QUOY et GAIMARD). The luminescence was ascertained on more than ten individuals of each salpa, although it could not be observed on weakened individuals kept in a bucket in the dark-room in the laboratory the next day. The luminescence was induceable only by strong stimuli, cutting or tearing of the body, and confined to only a small part of the body, which was about 10 mm long in *Thetys* and ca. 5 mm long in *Pegea*, both rather elongate than round in shape. The light was bluish white in colour, continued one or two minutes and could be repeated again by stimulus. These observations seem to prove that the luminescence in these salpas occurs probably in small luminous organs, but not caused by luminous bacterias or by the luminous secretion which is seen in cases of *Plocamopherus tilesii* BERGH or *Cypridina hilgendorfii* G. W. MÜLLER.

Figure 16 shows two individuals of *Pegea confoederata bicaudata*, the left one is 40 mm long, 16 mm wide and with 12 mm long right posterior protuberance and much shorter left protuberance, while the right one is 38 mm long and 15 mm wide and bears two short protuberances. Examining these specimens, the junior author found a pair of short, 1/4–1/5 of the length of endostyle, longitudinal crests situated one at each side of the endostyle roughly on the level of the ciliated groove. The

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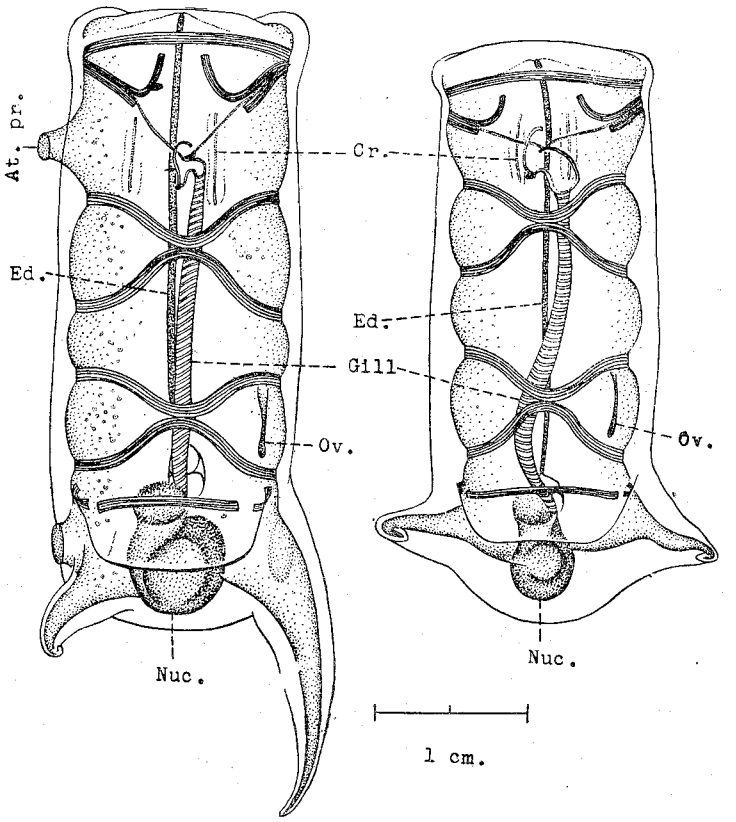

Fig. 16. *Pegea confoederata bicaudata* (QUOY et GAIMARD). Two aggregated individuals, dorsal. At. pr.—attachment process, Cr.—crest-like organ, Ed.—endostyle, Nuc.—nucleus, Ov.— ovary.

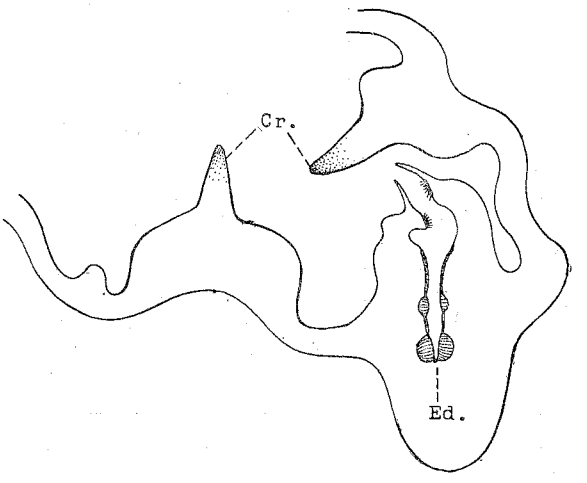

Fig. 17. *Pegea confoederata bicaudata* (QUOY et GAIMARD). Cross section of endostyle and crest-like organs, ×25.

cross section (Fig. 17) shows that many minute corpuscular bodies are densely aggregated along this crest. The present authors consulted with each other about the possibility of the luminescence of these crest-like organs, but could not prove the matter. The light occurred in this salpa was elongate in form as mentioned above, but it was quite uncertain whether the light consisted of a single line or double lines.

Pegea confoederata is not a rare salpa in the Japanese waters, it is already described as luminous. It is considered, however, to be worthy to record that the caudate form, *P. c. bicaudata*, occurs in the Japanese waters and it has a pair of crest-like organs occurring constantly along the endostyle in the aggregated form.